

P.I. A.S.20: Calculate the probability of an event and its complement

1. Six balls numbered from 1 to 6 are placed in an urn. If one ball is selected at random, find the probability that it is an odd-numbered ball.

[A] $\frac{1}{6}$ [B] $\frac{1}{2}$ [C] $\frac{5}{6}$ [D] $\frac{2}{3}$

2. A single six-sided fair die is tossed. Find the probability of obtaining a number greater than 4.

[A] $\frac{1}{3}$ [B] 1 [C] $\frac{1}{6}$ [D] $\frac{5}{6}$

3. You are one of 30 people entering a contest. What is the probability that your name will be drawn first?

[A] $\frac{1}{31}$ [B] $\frac{1}{15}$ [C] $\frac{1}{30}$ [D] $\frac{1}{29}$

4. Given the set of numbers (0, 1, 2, 3, 4, 5, 6, 7, 8), if one of the numbers of the set is chosen at random, find the probability that the number is a solution of $3x + 1 < 13$.

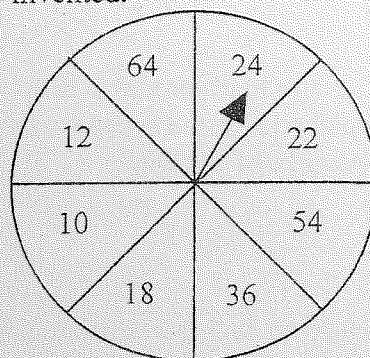
[A] $\frac{1}{2}$ [B] $\frac{4}{9}$ [C] $\frac{1}{9}$ [D] $\frac{5}{9}$

NAME: _____

5. What is the probability of drawing a spade from a deck of 52 playing cards?

[A] $\frac{1}{2}$ [B] $\frac{13}{100}$ [C] $\frac{1}{3}$ [D] $\frac{1}{4}$

6. This is a spinner used in a board game Helen invented.



What is the probability that the spinner will land on a multiple of 3 and 4?

[A] $\frac{1}{8}$ [B] $\frac{1}{4}$ [C] $\frac{3}{8}$

[D] $\frac{1}{2}$ [E] $\frac{5}{8}$

7. Donato's little brother Joseph is too small to see inside his sock drawer. Joseph has 2 pairs of white socks, 4 pairs of black socks, and 1 pair of blue socks inside his drawer. If the socks are not paired together, what is the probability that Joseph will reach inside his drawer and pick a black sock?

[A] $\frac{2}{7}$ [B] $\frac{3}{7}$ [C] $\frac{4}{7}$ [D] $\frac{6}{7}$

P.I. A.S.23: Calculate the probability of a series of independent events, a series of dependent events, two mutually exclusive events, two events that are not mutually exclusive

1. In a game, you choose a card from a box containing 4 red cards, 6 blue cards, and 5 yellow cards. You do not replace the first card in the box before choosing again. What is the probability of choosing a blue card and then choosing a yellow card?

[A] $\frac{5}{2}$

[B] $\frac{1}{5}$

[C] $\frac{5}{21}$

[D] $\frac{5}{42}$

2. A bag contains 2 yellow marbles and 5 red marbles. Two marbles are drawn at random. One marble is drawn and not replaced. Then a second marble is drawn. What is the probability that the first marble is red and the second one is yellow?

3. A bag contains 5 white marbles and 1 yellow marbles. Two marbles are drawn at random. One marble is drawn and not replaced. Then a second marble is drawn. What is the probability that the first marble is yellow and the second one is white?

[A] $\frac{1}{6}$

[B] 1

[C] $\frac{1}{5}$

[D] $\frac{1}{30}$

4. A drawer contains 5 red socks, 7 white socks, and 4 blue socks. Without looking, you draw out a sock and then draw out a second sock without returning the first sock. What is the probability that the first sock and the second sock are both red?

[A] $\frac{1}{16}$

[B] $\frac{1}{20}$

[C] $\frac{1}{12}$

[D] $\frac{25}{256}$

5. Four cards are drawn at random without replacement from a standard deck of 52 cards. Find $P(4 \text{ diamonds})$.

[A] $\frac{1}{256}$

[B] $\frac{11}{4,165}$

[C] $\frac{4}{13}$

[D] $\frac{1}{13}$

6. Compare the quantities in Column A and Column B.

Column A

$P(B)$ if A and B are independent,

$P(A \text{ and } B) = \frac{1}{4}$, and $P(A) = \frac{1}{2}$.

Column B

$P(B \text{ after } A)$ if A and B are dependent,

$P(A) = \frac{1}{2}$.

[A] The quantity in Column A is greater.

[B] The quantity in Column B is greater.

[C] The quantities are equal.

[D] The relationship cannot be determined from the information given.